EXHIBIT 16

EXPLANATION OF SIGNIFICANT DIFFERENCES TO THE FINAL RECORD OF DECISION FOR PARCEL G

HUNTERS POINT NAVAL SHIPYARD
San Francisco, California

Prepared for

Department of the Navy
Base Realignment and Closure
Program Management Office West

Prepared by

LANGAN

Langan Engineering and Environmental Services, Inc.
555 Montgomery Street, Suite 1300
San Francisco, California 94111

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
ARIC	Areas Requiring Institutional Controls
BEC	BRAC Environmental Coordinator
BRAC	Base Realignment and Closure
CAC	Citizen's Advisory Committee
CDPH	California Department of Public Health
CE2-Kleinfelder	CE2-Kleinfelder Joint Venture
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
ChaduxTt	A joint venture of St. George Chadux and Tetra Tech EM Inc.
COC	Chemical of concern
CRUP	Covenant to Restrict Use of Property
DTSC	California Environmental Protection Agency Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
ERRG	Engineering/Remediation Resources Group, Inc.
ESD	Explanation of Significant Differences
FFA	Federal Facility Agreement
Final ROD	Final Record of Decision
FS	Feasibility Study
HHRA	Human Health Risk Assessment
HPAL	Hunters Point Ambient Level
HPNS	Hunters Point Naval Shipyard
IC	Institutional Control
LUC	Land Use Control
NAVFAC	Naval Facilities Engineering Command
NAVSEA	Naval Sea Systems Command

Navy	United States Department of the Navy
NCP	National Contingency Plan
OMP	Operation and Maintenance Plan
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
RACR	Remedial Action Completion Report
RBC	Risk-based concentration
RD	Remedial Design
RG	Remediation Goal
RMP	Risk Management Plan
RMR	Risk Management Review
RSL	Regional Screening Level
Sealaska	Sealaska Environmental Services, LLC
SFRA	San Francisco Redevelopment Agency
SGAL	Soil gas action level
SulTech	A joint venture of Sullivan Consulting Group and Tetra Tech EM Inc.
SVOC	Semi-volatile organic compounds
TCRA	Time-critical removal action
TtEC	Tetra Tech EC, Inc.
TtEM	Tetra Tech EM, Inc.
VOC	Volatile organic compounds
Water Board	California Regional Water Quality Control Board, San Francisco Bay Region
ZVI	Zero-valent iron

EXPLANATION OF SIGNIFICANT DIFFERENCES TO THE FINAL RECORD OF DECISION FOR PARCEL G HUNTERS POINT NAVAL SHIPYARD San Francisco, California

1.0 INTRODUCTION

Parcel G is a portion of the former Hunters Point Naval Shipyard (HPNS; Figures 1 and 2), a Superfund site, undergoing remediation in accordance with a Federal Facility Agreement (FFA) between the United States Department of the Navy (Navy), United States Environmental Protection Agency (EPA), and the State of California through the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) and California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), collectively referred to as the FFA Signatories. This Explanation of Significant Differences (ESD) to the Final Record of Decision (Final ROD) for Parcel G is prepared in conformity to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 117(c) and National Contingency Plan (NCP) Section 300.435(c)(2)(i). The FFA Signatories signed the Final ROD for Parcel G at the former HPNS on February 18, 2009.

The Navy and EPA selected a remedy for Parcel G (the Selected Remedy) in 2009 based on future land use assumptions (educational/cultural, industrial and open space use except for mixed use in Block 30A) in the local reuse authority's 1997 Redevelopment Plan (San Francisco Redevelopment Agency [SFRA], 1997). The Final ROD placed residential land use restrictions on most of Parcel G, in the areas not then planned for residential use, without determining whether more sensitive uses would be permissible. As a result, the Final ROD restricts residential land use throughout the majority of Parcel G except Mixed Use Block 30A (Exhibit 1 and Figure 3). The Final ROD states that residential land uses could be allowed throughout Parcel G upon approval from the FFA Signatories.

After the 2009 Final ROD approval, the SFRA adopted an updated land use plan in 2010. This updated land use plan provides for Parcel G to be used for a mixed-use development (e.g., residential, commercial, retail, institutional, recreational, and open space) throughout the entire Parcel, provided the use is consistent with any land use restrictions imposed on the property through the CERCLA process. To accommodate implementation of the 2010 land use plan, San Francisco's Office of Community Investment and Infrastructure (OCII) as the Successor Agency to the SFRA, prepared a *Feasibility Assessment for Evaluating Areas Requiring Residential Land Use Restrictions, Parcel G, HPNS, San Francisco, California*, referred hereafter as the Feasibility

Assessment (Langan, 2016). The Feasibility Assessment includes an analysis of the current levels of residual chemicals of concern (COCs) in soil compared to soil Screening Levels and Action Levels for residential use (Table 1). The Feasibility Assessment defined Residential soil Screening Levels and Action Levels based on current health-based regulatory standards. Similar Action Levels have been applied at HPNS Parcels C, E, E-2, and UC-3. The Feasibility Assessment considered current conditions at Parcel G, reviewed previous risk evaluations, and accounted for prior soil excavation during Navy removal actions for both chemical and radiological contamination and installation of a durable cover. The Feasibility Assessment found that current conditions are appropriate for residential use in the majority of Parcel G and the areas requiring residential land use restrictions could be reduced as long as features of the ROD Selected Remedy (e.g., durable cover and institutional controls [ICs] with an operation and maintenance plan [OMP]) remain in place throughout Parcel G.

This ESD to the Final ROD proposes to modify the areas requiring residential land use restrictions by accepting the recommendations of the Feasibility Assessment (Figures 3 and 4). For purposes of the ESD, the term "residential land use" encompasses the following uses: a. residences, including any mobile homes or factory-built housing, constructed or installed for use as residential human habitation; b. hospitals for humans; c. schools for persons under 21 years of age; and/or d. day care facilities for children.

This ESD is prepared in compliance with the EPA guidance document *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (EPA, 1999). In accordance with this document and NCP Section 300.435(c)(2), post-ROD modifications fit into one of three categories, depending on the extent and scope of the modification: Non-significant or Minor Changes, Significant Changes, and Fundamental Changes. The regulatory agencies requested that modifying the land use designation for certain areas of Parcel G be documented in an ESD as a significant remedy change.

Regulatory agencies including the EPA, DTSC and the Water Board, are responsible for concurring with this ESD pursuant to the FFA.

This ESD will become part of the Administrative Record for Parcel G and will be available for public review at the following locations:

San Francisco Main Library
Science, Technical, & Govt. Doc Rm.
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, CA 94102
Phone: (415) 557-4500

Information Repository
HPNS Site Trailer
690 Hudson Avenue
San Francisco, CA 94124

The complete Administrative Record is located at 1220 Pacific Highway, San Diego, California, and is maintained by Ms. Diana Silva, Naval Facilities Engineering Command (NAVFAC), Southwest Administration Record Manager, phone: (619) 532-3676.

1.1 Statement of Purpose

This ESD modifies the areas that require residential land use restrictions established in the Final ROD for Parcel G (Figures 3 and 4) by accepting the recommendations of the Feasibility Assessment (Langan, 2016). Modification of the areas requiring residential land use restrictions was requested by OCII. The Feasibility Assessment provides the technical basis for reducing the areas requiring residential land use restrictions (see Sections 3.0 and 4.0 of this ESD) by comparing soil contaminant concentrations to residential soil Screening and Action Levels as defined in the Feasibility Assessment (Table 1).

1.2 ESD Objective

The objective of this ESD is to document modifications to the areas requiring residential land use restrictions to reflect an evaluation of areas requiring restrictions as presented in the Feasibility Assessment.

1.3 ESD Organization

This ESD documents a modification to areas requiring residential land use restrictions per the Final ROD for Parcel G (2009). This ESD consists of the following sections:

- Section 1.0 introduces the ESD to the Final ROD and describes scope of the differences.
- Section 2.0 presents a summary of the site description and history, contamination, and the Selected Remedy, as described in the Final ROD for Parcel G, including a detailed description of the required ICs.
- Section 3.0 presents the basis of significant differences to the Selected Remedy.
- Section 4.0 presents a description of significant differences.
- Section 5.0 provides support agency comments received on the Draft ESD and the Navy's response to comments. The final version of the ESD incorporates revisions based on the support agency comments.
- Section 6.0 presents the statutory and regulatory determinations by the Navy, EPA, DTSC and Water Board.
- Section 7.0 describes public availability of the ESD and the public participation process.
- Section 8.0 lists the references cited in this ESD.

2.0 SUMMARY OF SITE HISTORY, CONTAMINATION AND SELECTED REMEDY

2.1 Site Description and History

Parcel G is a portion of the former HPNS (Figures 1 and 2). Former HPNS is located in southeastern San Francisco, California, on a peninsula that extends east into San Francisco Bay (Figure 1). The Navy significantly expanded HPNS between 1935 and 1975 to its present configuration by depositing fill into the San Francisco Bay to increase the land area (which included Parcel G) from less than 100 acres to about 500 acres. Imported fill material was obtained from a variety of local sources, including serpentine bedrock, which naturally contains relatively high levels of arsenic, manganese, nickel, and other metals derived from upland areas at HPNS (Navy, 2009).

Contamination at Parcel G is associated with dispersed ubiquitous metals[1] and isolated concentrations of lead, chromium VI, and organics in soil, metals and volatile organic compounds (VOCs) in groundwater, and radiologically impacted structures and soil. Assessment of contamination and associated human health and ecological risk for Parcel G is based on the Final Revised Feasibility Study (FS) Report for Parcel D[2] (Sultech, 2007), including the revised baseline human health risk assessment (HHRA), and the radiological addendum to the FS Report. The baseline HHRA evaluated residential, industrial, recreational, and construction worker risks throughout Parcel G irrespective of the planned reuse. The nature of contaminants in soil and groundwater at Parcel G can mostly be attributed to industrial activities by the Navy or other tenants, except for several ubiquitous metals found at ambient concentrations (SulTech, 2007).

2.1.1 Selected Remedy

The Navy and EPA jointly selected the remedy for Parcel G, which is described in the Final ROD and was concurred on by DTSC and the Water Board. The Selected Remedy included

[1] Consistent with usage in the Final ROD for Parcel G, this ESD uses the term "ubiquitous metals" to refer to naturally occurring metals in source material used to create HPNS. The Final ROD for Parcel G further clarifies, "The term "ubiquitous" refers to metals that are naturally occurring or are in the same concentration ranges as naturally occurring metals in the source material (including material from the same geologic formations in the San Francisco area) used for filling operations at HPS. The Navy acknowledges that industrial sources of metals exist at HPS and that there is a potential that some concentrations of metals could have sources other than naturally occurring materials. The Navy has worked to remove these sources during the response actions taken to date. The Navy further acknowledges that the regulatory agencies do not agree with the Navy's position that ubiquitous metals are naturally occurring."

[2] Parcel G was previously a portion of Parcel D, which was later split into Parcels D-1, D-2, G, and UC-1.

excavation for chemical and radiological soil contamination, treatment for groundwater contamination, and ICs to prevent exposure in areas where there is potential unacceptable risk posed by COCs in soil and groundwater. As described in the ROD, ICs include restrictive covenants regulating land use, restricting activities, and prohibiting activities and are to remain in place as long as contamination remains above levels that allow for unlimited use and unrestricted exposure.

The ROD Selected Remedy for soil (FS Alternative S-5) had the greatest scope and cost and provides the greatest "Overall Protection of Human Health and the Environment" when compared to FS Alternatives S-1 through S-4. Alternative S-5 included excavation and off-site disposal of soil in selected areas, installation of durable covers across all of Parcel G, and ICs. Durable covers were installed to act as physical barriers to cut off potential exposure to any residual risks from COCs remaining in soil. Excavations targeted soil contaminated with concentrations of lead or polycyclic aromatic hydrocarbons (PAHs) that exceeded industrial Remediation Goals (RGs). The remedy for soil also incorporated removal and off-site disposal of two soil stockpiles. Soil Gas Action Levels (SGALs) were developed for residential use and a soil vapor investigation was conducted to verify areas requiring ICs (ARICs) for soil vapors.

The groundwater remedy (FS Alternative GW-4A&B) included active treatment by injection of zero-valent iron (ZVI) to treat VOCs and treat hexavalent chromium in groundwater, followed by long-term monitoring. Details of long-term groundwater monitoring at Parcel G may be found in the current work plan for the basewide groundwater monitoring program (CE2-Kleinfelder, 2012). ICs will prohibit domestic use of groundwater throughout Parcel G. ARICs for VOCs were developed considering risks to human health via the vapor intrusion pathway under the residential scenario.

The radiological remedy (FS Alternative R-2) included cleanup and off-site disposal of radiologically impacted soil and structures. DTSC and the California Department of Public Health (CDPH) have concurred that Parcel G is suitable for unrestricted use with respect to radiological issues (DTSC, 2012 and 2016).

ICs, including restrictive covenants regulating restricted land use, restricted activities, and prohibited activities, will be implemented to prevent exposure in areas where there is potential unacceptable risk posed by COCs in soil and groundwater. ICs will remain in place as long as contamination remains above levels that allow for unlimited use and unrestricted exposure.

2.1.2 Summary of Remediation Efforts

The Navy has completed the ROD Selected Remedy with the exception of implementing ICs. ICs implementation will occur upon property transfer. The details for ICs in the form of deed restrictions and a covenant to restrict use of property (CRUP) are detailed in the Parcel G Land Use Control Remedial Design (LUC RD; ChaduxTt, 2010) and summarized in Section 2.2 below.

The Final Remedial Action Completion Report (RACR) for Parcel G documenting durable cover installation, groundwater treatment, and the legal mechanisms that will be relied upon to implement ICs was submitted in March 2014 (Arcadis, 2014). EPA, DTSC, and the Water Board have concurred with the Final RACR (EPA, 2014a; DTSC, 2014; Water Board, 2014). The Final RACR for the soil excavation and stockpile removals at Parcels B, D-1, and G was submitted in October 2011 (ERRG, 2011), and EPA and DTSC have concurred with this RACR (EPA, 2014b; DTSC 2011).

The ROD Selected Remedy for soil incorporated targeted excavation of soil contaminated with concentrations of lead or PAHs that exceeded industrial RGs, removal and off-site disposal of two soil stockpiles, installation of a durable cover, and completion of a soil vapor investigation. Through installation of a durable cover (i.e., hardscape or two feet of clean imported fill) and implementation of ICs, the ROD Selected Remedy will reduce risk from potential residual contamination in soil to de minimis levels by eliminating exposure pathways such as incidental ingestion of soil, dermal exposure to soil, and inhalation of fugitive dust.

A soil vapor investigation was completed at Parcel G in 2010. The soil vapor investigation included an assessment of risks to human health via the vapor intrusion pathway under both residential and commercial/industrial scenarios. Residential SGALs, which account for VOC vapors from both soil and groundwater sources, were used to identify ARICs for VOCs (Sealaska, 2013).

Contamination in groundwater has been reduced through active treatment. Through implementation of ICs (i.e., ARICs for VOCs and prohibition on use of groundwater), the Navy's remedy will reduce risk from potential contamination in groundwater to de minimis levels by eliminating exposure pathways such as ingestion of groundwater, dermal exposure to groundwater, and inhalation of vapors.

According to the Final Removal Action Completion Report (TtEC, 2011) and Final Addendum to Parcel B and G Radiological Removal Action Completion Report (TtEC, 2016), the Navy demonstrated that radionuclide levels are below regulatory thresholds. The Navy completed a

time-critical removal action (TCRA) for storm drains and sanitary sewers within Parcel G between 2007 and 2011 (TtEC, 2011). The TCRA involved excavating impacted storm drain and sanitary sewer lines and surrounding soil and off-site disposal of radiologically contaminated material (TtEC, 2011). Buildings or former building sites identified as radiologically impacted in the Historical Radiological Assessment for HPNS (NAVSEA, 2004) were subsequently surveyed, remediated if necessary and determined to present no unacceptable radiological risks (TtEC, 2016). DTSC and CDPH have concurred that Parcel G is suitable for unrestricted use with respect to radiological issues (DTSC, 2012 and 2016).

2.2 Summary of Institutional Controls

ICs will limit exposure to hazardous substances for future landowners or property users and are an integral part of the remedy. IC objectives will be met by access controls until the time of transfer.

The IC objectives for Parcel G are as follows (ChaduxTt, 2010; TriEco-Tt, 2015):

1. The following activities are prohibited throughout Parcel G:
    a. Growing vegetables, fruits, or any edible items in native soil for human consumption. Plants for human consumption may be grown if they are planted in raised beds (above the CERCLA-approved cover) containing non-native soil. Trees producing edible fruit (including trees producing edible nuts) may also be planted provided they are grown in containers with a bottom that prevents the roots from penetrating the native soil.
    b. Use of groundwater.
2. The portions of Parcel G designated as the Shipyard South Multi-Use District in the former SFRA's HPNS Redevelopment Plan, as amended in 2010 (SFRA, 2010), which were designated for open space, educational/cultural, and industrial land uses in SFRA's former 1997 redevelopment plan, as adopted in 1997 (SFRA, 1997) are restricted for any of the following uses unless approved by the FFA signatories in accordance with the quitclaim deed, CRUP, and Risk Management Plan (RMP) for each parcel:
    a. A residence, including any mobile home or factory-built housing, constructed or installed for use as residential human habitation,
    b. A hospital for humans,
    c. A school for persons under 21 years of age, or

d. A day care facility for children.

3. The following activities are restricted throughout Parcel G unless prior written approval for these activities is granted by the FFA signatories:

   a. "Land disturbing activity," which includes, but is not limited to: (1) excavation of soil, (2) construction of roads, utilities, facilities, structures, and appurtenances of any kind, (3) demolition or removal of "hardscape" (for example, concrete roadways, parking lots, foundations, and sidewalks), (4) any activity that involves movement of soil to the surface from below the surface of the land, and (5) any other activity that causes or facilitates movement of known contaminated groundwater. Land-disturbing activities are not intended to include placement of additional clean, imported fill on top of the soil cover that the Navy has constructed at Parcel G.

   b. Alteration, disturbance, or removal of (i) any component of a response or cleanup action (including, but not limited to revetment walls and shoreline protection and soil cover/containment systems); or (ii) groundwater extraction, injection, and monitoring wells and associated piping and equipment; or (iii) associated utilities.

   c. Extraction of groundwater and installation of new groundwater wells, with the exception of construction, operation, and maintenance responses or remedial actions as required or necessary under the CERCLA remedy.

   d. Removal of or damage to security features of a CERCLA remedy or monitoring device (for example, locks on monitoring wells, survey monuments, fencing, signs, or monitoring equipment and associated pipelines and appurtenances).

   e. Construction of enclosed structures. Risk to human health may exist from potential intrusion of VOC vapors into structures built at Parcel G. Consequently, these areas are included in the ARICs for VOC vapors. Prior to construction of any new enclosed structure within a VOC ARIC, the Owner shall obtain approval from the FFA signatories of the vapor mitigation engineering controls or design alternatives to be incorporated in that structure. Prior to occupation of enclosed structures with a VOC ARIC, the Owner shall obtain FFA signatory approval that any necessary engineering controls or design alternatives have been properly constructed and are operating successfully.

This ESD reduces the areas subject to IC Item 2, described above, based on an analysis of soil contaminant concentrations, as described in the Feasibility Assessment and summarized in Sections 3.0 and 4.0 below.

3.0 BASIS FOR SIGNIFICANT CHANGES IN THE SELECTED REMEDY

This ESD is a refinement of the soil remedy. The soil remedy selected in the Final ROD is Alternative S-5: excavation and disposal, covers, and ICs. The Final ROD, signed on February 18, 2009, based future land use assumptions on the local reuse authority's Redevelopment Plan current at the time of preparation of the ROD (SFRA, 1997). Under the 1997 Redevelopment Plan, the assumed land uses in Parcel G were residential, industrial or recreational depending on the development block within the Parcel, with only a portion of Parcel G identified for residential use (Block 30A, Exhibit 1 and Figure 3). The Final ROD placed residential land use restrictions on most of Parcel G, in the areas not then planned for residential use, without determining whether more sensitive uses would be permissible. After the 2009 Final ROD approval, OCII adopted an updated land use plan in 2010. This updated land use plan provides for Parcel G to be used for a mixed-use development (e.g., residential, commercial, retail, institutional, recreational, and open space) throughout the entire Parcel, provided the use is consistent with any land use restrictions imposed on the property through the CERCLA process. The objective of this ESD is to document a modification to the areas requiring residential land use restrictions to accommodate the implementation of the current Redevelopment Plan.

Modification of the areas requiring residential land use restrictions was recommended in OCII's Feasibility Assessment (Langan, 2016). The Feasibility Assessment identifies all soil samples with residual COCs in soil that exceed residential soil Screening Levels and then compares those samples to residential Action Levels (Table 1). The residential soil Screening Levels for COCs in soil are based on the EPA's Regional Screening Levels (RSLs, 2016), the DTSC's risk-based concentration (RBC) for lead (2011), and Hunters Point Ambient Levels (HPALs) for metals (PRC, 1995). According to the Feasibility Assessment, over 200 soil samples, from approximately 150 boring locations, have results above these residential Screening Levels. The Feasibility Assessment found that approximately 86% of soil sample concentrations above residential Screening Levels are metals (antimony, arsenic, cobalt, copper, iron, and manganese) likely associated with borrowed fill placed at Parcel G. For soil samples exceeding residential Screening Levels, the Feasibility Assessment then compares those samples to residential soil Action Levels. Consistent with soil remedies established at HPNS since 2012, which apply Action Levels based on five to 10 times RGs to identify areas requiring excavation, the Feasibility Assessment derived Action Levels by applying a multiplication factor of five to the conservative EPA RSLs and the Lead DTSC RBC and a factor of one to HPALs. Similar Action Levels have been applied at HPNS Parcels C, E, E-2, and UC-3.

Twenty-three soil samples, from 20 boring locations, have results above residential Action Levels. The technical analysis undertaken in the Feasibility Assessment is further described in Section 4.1.

The Feasibility Assessment demonstrates that if Action Levels similar to those applied at HPNS Parcels C, E, E-2 and UC-3 are applied at Parcel G, most of the soil samples with residual COCs do not exceed these levels. The Final ROD calls for a durable cover and prohibitions on consumption of homegrown produce throughout Parcel G. The Feasibility Assessment recommends that when combined with the durable cover requirement, prohibition on consumption of homegrown produce, and ICs with an OMP, a sufficient level of protectiveness can be achieved to allow residential use at locations where residual COCs in soil are below Action Levels. Those portions of Parcel G where COC concentrations in soil exceed residential soil Action Levels are recommended to remain restricted against residential land use. All areas of Parcel G will continue to require a durable cover and ICs with an OMP.

Based on the evaluation and recommendations documented in the Feasibility Assessment, this ESD modifies the extent of the areas subject to residential land use restrictions as outlined above in Section 2.2, IC Item 2. All other components of the soil remedy remain unchanged, including preservation of the durable cover and implementation of ICs. Figure 4 depicts the modified extent of areas requiring residential land use restrictions at Parcel G.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES

The remedy change documented in this ESD is a modification to areas restricted against residential use, which is a change to a component of the Soil Remedy selected in the Final ROD. However, the change does not fundamentally alter the remedy. The change does not affect the evaluation of the Soil Remedy with respect to NCP criteria, and complies with all applicable or relevant and appropriate requirements identified and documented in the Final ROD. This ESD alters the areas requiring residential land use restrictions as specified by the ROD Selected Remedy, but does not remove residential land use restrictions from areas in Parcel G that do not meet the applicable residential soil Action Levels and does not remove other ICs required by the ROD.

The following areas identified in the SFRA's 1997 Redevelopment Plan (Exhibit 1), formerly requiring residential land use restrictions, are subject to significant changes:

- Educational/cultural Block 29;
- Industrial Blocks 30B, 37, and 38;
- Open space Blocks 39 and DOS-1.

This ESD establishes the following areas as requiring residential land use restrictions (Figure 4):

- Residential risk grids: 067070, 068064, 069064, 069065, 069066, 069067, 070066, 071066, 072068, 072069, 073068, 076057, 076072, 077072, 080073, 081069, 081073, and 088066;
- The area bounded by boring point IDs 6671E1B, 6671N1A, 6671N3A, and PA37SS08;
- The area bounded by boring point IDs 3701S1E, 3701S1F, 3701S2A, and 3701W2A;
- The area bounded by boring point IDs 3378B01, 3378N1A, 3378S1A, 3378W1A.

The following sections describe the technical analysis supporting the modified areas requiring land use restrictions, the process that property owners may use for obtaining FFA Signatory approval of residential use in areas that remain restricted for residential use, and evaluation of the change to the ROD Selected Soil Remedy.

4.1 Modification to Areas Requiring Residential Land Use Restriction

To evaluate whether environmental conditions at Parcel G are suitable for residential land use, the Feasibility Assessment (Langan, 2016) compared COC concentrations in soil to residential soil Screening Levels and Action Levels (Table 1). The Feasibility Assessment identified residential soil Screening Levels based on the EPA's RSLs (2016), the DTSC's RBC for lead (2011), and HPALs for metals (PRC, 1995). Consistent with soil remedies established at HPNS since 2012, which rely on Action Levels based on five to 10 times RGs to identify areas requiring excavation, the Feasibility Assessment derived Action Levels by multiplying the EPA RSLs and the Lead DTSC RBC by five; if these levels are below the HPAL then the HPAL is the Action Level. The Feasibility Assessment recommended residential Action Levels for COCs in soil as the appropriate levels for identifying areas of Parcel G where current conditions are suitable for residential land use (Table 1).

COCs evaluated in the Feasibility Assessment include: 1) metals; 2) semi-volatile organic compounds (SVOCs), including PAHs and pesticides; 3) polychlorinated biphenyls (PCBs); and 4) VOCs. For the majority of COCs at Parcel G, residential soil Action Levels are specific chemical concentrations that generally correspond to a five-in-one million [5×10^{-6}] cancer risk or a non-carcinogenic hazard quotient of five. Following the Navy's accepted risk assessment practices, these cancer risks and non-cancer hazards quotients do not consider the protection provided by the durable cover and ICs. The NCP states, "For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response." The cancer risk level that corresponds to residential soil Action Levels (5×10^{-6}) is significantly below the upper bound of the cancer risk management range of 10^{-4} as defined by the NCP. A hazard quotient, or hazard index if additive toxic effects are present, of less than one indicates that adverse non-cancer health effects are not expected. For a hazard quotient or hazard index greater than one, risk management measures are recommended. The technical analysis included in the Feasibility Assessment concluded that the following specific COCs exceed residential soil Action Levels in specific delineated locations (Figure 4): 1) metals, including arsenic, hexavalent chromium, cobalt, lead, and manganese; and 2) PAHs, including benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene. The Feasibility Assessment considered the cumulative impacts of multiple COCs acting on the same organ group. Long-term cancer and non-cancer risks associated with COCs in soil will be mitigated through the implementation of measures required by the ROD Selected Remedy. These measures include placement of durable covers

and restrictions on homegrown produce, combined with ICs to maintain the durable cover through implementation of an OMP throughout Parcel G intended to eliminate the exposure pathways of concern.

This ESD identifies areas requiring residential land use restrictions according to 2,500-square-foot exposure areas – "residential risk grids" – that contain COCs in soil above Action Levels (Figure 4). Residential risk grids have historically been employed at HPNS to identify the soil areas that may pose a risk to human health or otherwise contain no recognized environmental conditions. This evaluation is described in the 2000 Risk Management Review (RMR) Process for Parcel G (TtEM, 2000) and the HHRA[3] included in the 2007 Revised FS (SulTech, 2007). If existing soil data with COCs below residential Action Levels adequately delineate a smaller area with COCs above Action Levels, these smaller areas are subject to residential land use restrictions rather than the entire residential risk grid (Figure 4). The Feasibility Assessment recommended boundaries for areas requiring restricted land use in consideration of COC delineation data, distance between the nearest grid boundary and the sample with COCs above Action Levels, and conclusions of the 2000 Risk Management Review Process (TtEM) and the 2007 Revised FS (SulTech). The Feasibility Assessment did not identify additional areas requiring sampling to justify the proposed boundaries. Figure 4 depicts the areas recommended to remain restricted against residential use. All other areas on Parcel G were evaluated in the Feasibility Assessment and determined to no longer need a restriction for residential use because the soil COC levels are below the Action Level, would have a durable cover, and would have a homegrown produce restriction. All areas of Parcel G will continue to require a durable cover and maintenance of the cover through ICs that require implementation of an OMP.

4.2 Future Modifications to Areas Requiring Residential Land Use Restriction

In the areas that remain restricted against residential use, in accordance with the Final ROD, residential use "must be reviewed and approved by the FFA Signatories in accordance with the CRUP, Quitclaim Deed(s), LUC RD, and the RMP" prior to such use. This ESD clarifies that the FFA Signatories may modify the areas requiring residential land use restrictions at any time in the future upon their satisfaction that the areas are suitable for residential use. Property owners may apply for FFA Signatory approval of modification of areas that remain restricted for residential use in accordance with applicable procedures set forth in the relevant CRUP and RMP.

[3] The baseline HHRA evaluated residential, industrial, recreational, and construction worker risks throughout Parcel G, regardless of the planned reuse (Sultech, 2007).

4.3 Evaluation of Remedy Change for Parcel G

This section evaluates the Parcel G post-ROD remedy changes against the criteria presented in published guidance (EPA, 1999).

4.3.1 Scope

The ROD Selected Remedy for soil remains S-5: excavation and disposal, covers, and ICs. The ICs portion of the remedy placed land use restrictions on the majority of Parcel G consistent with land uses in the local reuse authority's 1997 Redevelopment Plan current at the time the Final ROD was prepared. This ESD modifies the areas requiring residential land use restrictions. Specifically, to facilitate implementation of the updated Redevelopment Plan adopted by the OCII (SFRA, 2010), the areas requiring residential land use restrictions have been reduced to those areas depicted on Figure 4. This modification is therefore a change in the scope of the ICs. Should future landowners wish to pursue approval by the FFA Signatories of additional changes to the areas requiring land use restrictions identified in this ESD, future land owners must follow the procedures outlined in the Relevant CRUP and RMP.

4.3.2 Performance

Modification of the areas requiring land use restrictions does not change the performance of the ROD Selected Remedy for soil. In areas remaining restricted, there is no change in the performance of the remedy. In the areas not recommended for land use restrictions, the restriction on residential use was applied in the Final ROD without evaluating whether more sensitive land uses would be permissible. The Feasibility Assessment considers current conditions at Parcel G and accounts for prior soil excavation during Navy removal actions for both chemical and radiological contamination and installation of a durable cover. The Feasibility Assessment recommends that a sufficient level of protectiveness for residential use is achieved in those areas where residual concentrations of COCs in soil are below the Action Levels (see areas listed above in Section 4.0), given that all other features of the ROD Selected Remedy (e.g., durable cover and ICs with an OMP) remain in place throughout Parcel G.

4.3.3 Cost

The cost identified in the Final ROD, Soil Alternative S-5, was a Capital Cost of $1,290,000 and an Operations and Maintenance Cost of $599,000. There will be no change in cost based on revising areas subject to residential land use restrictions. In accordance with the Final ROD, future owners may seek FFA Signatory approval through procedures outlined in the RMP to remove the land use restriction on those areas that remain restricted. Owners seeking such

approval may need to excavate soil with elevated concentrations of COCs, and in doing so, may incur costs beyond normal development costs. However, these costs would be incurred without regard to the modification of the remedy set forth in this ESD. As a result, there is no change in cost associated with changing the areas subject to residential land use restrictions.

4.3.4 Type of Change

In response to regulatory agency input regarding the specific circumstances and nature of the modification of the land use designation for certain areas of Parcel G, the Navy has agreed to document the changing of land use restrictions on portions of Parcel G as a significant change in this ESD. Accordingly, this ESD documents a change to the Parcel G remedy that expands the areas determined to be suitable for residential land use to encompass the majority of Parcel G. Residential land use restrictions will remain in effect for areas with COCs above residential Action Levels identified in the Feasibility Assessment and as shown on Figure 4.

4.3.5 Administrative Process Requirements

A notice of availability and brief description of the ESD will be published in a local newspaper and a copy of the ESD will be provided in the administrative record and information repository for HPNS.

5.0 SUPPORT AGENCY COMMENTS

Appendix A presents regulatory agency comments received on the Draft ESD and the Navy's response to these comments. Revisions based on the regulatory agency comments are incorporated into the final version of the ESD.

6.0 STATUTORY AND REGULATORY DETERMINATIONS

The modification to the areas that require residential land use restrictions represents a significant change to the Final ROD. The remedy remains protective of human health and the environment and continues to comply with applicable or relevant and appropriate requirements (ARARs) identified in the Final ROD in accordance with CERCLA Section 121(d)(2) and NCP Section 300.430(f)(1)(ii)(B)(1) and (2). Any areas with COCs in soil that exceed Action Levels recommended by the Feasibility Assessment will remain restricted; further, a protective durable cover and ICs will remain throughout the parcel. Activity restrictions related to land disturbing activity, growing vegetables or fruits in native soil for human consumption, use of groundwater, and VOC vapors at specific locations within Parcel G, will mitigate potential unacceptable risk from any residual contamination in soil and groundwater.

7.0 AUTHORIZING SIGNATURE

April 19, 2017

Derek J Robinson, PE — Date

BRAC Environmental Coordinator

Base Realignment and Closure, NAVFAC Headquarters

8.0 PUBLIC PARTICIPATION

An ESD fact sheet was distributed to the community and open for comments (Appendix B). A public meeting regarding the ESD was held on December 7, 2016 where the public was able to provide comments to the Navy. In addition, the public was invited to send written comments and the deadline for comments was extended to account for the end of year break. No written community comments were received.

The OCII has also presented ESD related topics and responded to community questions at Citizen's Advisory Committee (CAC) meetings throughout 2016, including CAC meetings held at 451 Galvez Avenue at HPNS on January 25, April 25, October 24, and November 28, 2016 and a meeting held at 1800 Oakdale Avenue on November 14, 2016.

This ESD will become part of the Administrative Record Files for the site (NCP, 40 Code of Federal Regulations [CFR] Sections 300.435(c)(2)(i)(A) and 300.825 (a)(2)). A notice of public availability and a brief description of the ESD will be published in a major local newspaper as required by the NCP, 40 CFR Sections 300.435(c)(2)(i)(B). The ESD will be available for public review at the following locations:

San Francisco Main Library
Science, Technical, & Govt. Doc Rm.
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, CA 94102
Phone: (415) 557-4500

Information Repository
HPNS Site Trailer
690 Hudson Avenue
San Francisco, CA 94124

The complete Administrative Record is located at 1220 Pacific Highway, San Diego, California, and is maintained by Ms. Diana Silva, NAVFAC, Southwest Administration Record Manager, phone: (619) 532-3676. For access to the Administrative Record or additional information, contact:

Mr. Derek Robinson
Base Realignment and Closure (BRAC) Program Environmental Coordinator (BEC)
Base Realignment and Closure Program Management Office West
33000 Nixie Way, Bldg. 50, 2nd Deck
San Diego, CA 92147
Phone: (619) 524-6026